

SCALABLE TWO-STAGE VIRTUAL OUTPUT QUEUING SWITCH  
AND METHOD OF OPERATION

## ABSTRACT OF THE DISCLOSURE

5       A fixed-size data packet switch comprising: 1) N input ports  
for receiving incoming fixed-size data packets at a first data rate  
and outputting the fixed-size data packets at the first data rate;  
2) N output ports for receiving fixed-size data packets at the  
first data rate and outputting the fixed-size data packets at the  
10 first data rate; and 3) a switch fabric interconnecting the N input  
ports and the N output ports. The switch fabric comprises: a) N  
input buffers for receiving incoming fixed-size data packets at the  
first data rate and outputting the fixed-size data packets at a  
second data rate equal to at least twice the first data rate; b) N  
15 output buffers for receiving fixed-size data packets at the second  
data rate and outputting the fixed-size data packets at the first  
data rate; and c) a bufferless, non-blocking interconnecting  
network for receiving from the N input buffers the fixed-size data  
packets at the second data rate and transferring the fixed-size  
20 data packets to the N output buffers at the second data rate.